

# INDEXA



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## ***Guinea-Bissau (J5C)—2008 by the F6KOP Team***

***By Pascal Rapharin – F5JSD***

**W**hen I look back to 1999, I still remember the first club expedition to a French IOTA. This was a small scale activity—we had no experience of DXpeditioning, and setting up logistics to run two stations 300km away from home was a significant undertaking for most of us who were still wet behind the ears. Our QSO rate in those days would probably make us laugh; however, we had so much fun and such good team spirit that the club decided to repeat this on an annual basis from different IOTAs making this a little bigger and better every year. In 2004, we wanted to give a try to a larger type of adventure. We needed to know if we could also be part of those fellow DXpeditioners who made us dream during countless hours spent in our shacks listening to some exotic callsigns. We chose to operate as 5V7C from Togo in West Africa from the same site that the Voodoo Contest Group successfully used from 1996 to 1998 during CQWW CW. Again our number of QSOs was not outstanding, but we discovered our first real pile-ups and we instantly got addicted to the adrenaline flow they generate. Since then, our core team decided to improve and we operated as TO7C, 5H1C and XT2C always focusing on semi-rare entities as part of our learning curve process. Across the years, we met new friends in the DX community, and we invited several foreign guest operators who shared their experience and skills with us. They have since become part of the



**Seated next to the pool at Kaza Afrikana are the sixteen hard working operators of J5C who gave us 61,939 QSOs in ten days. And, if you look carefully at the right end of the back row, INDEXA was there.**

enlarged team. In order to prepare ourselves to activate a most wanted entity within a few years, we felt it was time to train ourselves on more complex logistics and to start building significantly larger teams. This is what we started with J5C. Read on !

### **Planning**

The J5C project started as usual while Frank/F4AJQ, our leader, was still in Africa on his way back from our previous XT2C operation in Ouagadougou. We checked several options among a pool of destinations

permanently under evaluation and finally selected Guinea-Bissau after several weeks of investigations. This was not a really rare entity (#100 per DX Magazine most wanted survey), but when we looked closer at the numbers, we could see that the demand was significantly higher in Asia (#26), in the Western part of North America (#51) and globally on the low bands. In addition we discovered an extra challenge as no Japanese station had ever contacted J5

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on top band.

Our DXpedition goals were therefore set: (1) make a minimum of 60,000 QSOs, (2) maximize the score on low bands (40m to 160m), (3) maximize the score with AS/OC/NA, (4) make the first ever JA-J5 QSO on 160m, and (5) finally, maximize operator fun while doing it.

Being at the bottom of the sunspot cycle would definitely help our effort to set up a serious operation on the lower bands. We chose to operate during the northern hemisphere winter in order to have lower band noise in most of our targeted areas. We were willing to run a 10 day operation, including 2 week-ends, between Jan 1<sup>st</sup> and Feb 15<sup>th</sup> at the latest. We knew that selecting such dates would have a negative impact on propagation for the higher bands, but this was the trade-off we made. During our planning phase, we struggled to identify a suitable operating location. The long-lasting civil war in Guinea-Bissau that ended in 1999 destroyed much of the country's infrastructures and the country is still slowly recovering. We could not find a hotel or guesthouse at an affordable price with enough land for our antenna farm in or near the capital city Bissau. In fact, the limited tourist resorts are found on the Bijagos archipelago, a large group of islands located 70km west of Bissau. This is a "most wanted entity" for sport fishing amateurs, and a number of fishing lodges are available for rent at very high prices!

After many e-mails and phone calls to all hotels advertised on the Internet, Frank finally got in touch with the French manager of the Kaza Afrikana hotel, Gilles Delevay. This is a fishing lodge able to accommodate up to 16 people with about 10,000 square meters of available land located on a North-East facing coast of Bubaque Island, the most populated of the archipelago. Our operation dates were set from Jan 11<sup>th</sup> until

Jan 21<sup>st</sup> when we discovered that January is a low season for fishing and that Gilles offered reduced rates if we could fully book his hotel for some of that period.

Kaza Afrikana proved to be an ideal location for a number of important reasons. First of all, despite the fact that it is a very comfortable lodge with satellite internet access, Gilles already had an exposure to ham radio as he had hosted F6BUM operating as J5BI a few months earlier. Therefore, he was able to locally steer us through the lengthy process of securing our transmitting license. As usual, everything is and should be negotiated in Africa. The licensing authority initially wanted us to license each operator which would have led to nearly \$7,000 in license fees. After several trips to Bissau and several months of discussions, Gilles managed to significantly reduce this and we only had to pay the equivalent of three licenses plus some usual gifts to appropriate people. Secondly, the public electricity network on Bubaque is based on old generators and is very unreliable. Kaza Afrikana has two large private diesel generators capable of generating 22kVA and 33 kVA. These are well maintained and could easily provide the necessary power for several high power stations. Gilles agreed to let the larger generator run 24 hours per day for the duration of our operation. There was a fee for the extra fuel needed, but this was a serious relief. We felt confident we would not experience power outages as we did in Tanzania during 5H1C. Last, but not least, Gilles offered to welcome us at the airport in order to facilitate customs clearance and use his fishing boats to take care of our transfer between the airport and the lodge. More on this unforgettable experience later!

Team building was more complex than in previous years. Frank had negotiated a group reduced rate with Air Senegal to bring us from Paris to Bissau via Dakar. Our target was to

find 16 guaranteed operators, with a good balance between modes and to limit the number of unknown operators in order to ensure good team bonding. Failing to find 16 operators would have meant paying for unused seats to Air Senegal and losing the luggage allowance linked to those missing passengers. We managed to identify 16 team members by the summer 2007, but some of them unfortunately had to drop-out due to professional constraints. One of these cancellations was a shock to us, Serge (F6AML), the co-leader of the expedition, but also our low band and logistics expert learned in late October that he had to cancel his holidays. The final team was set in November and consisted of: Frank (F4AJQ), Gerard (F2JD), Gerard (F2VX), Pascal (F5JSD), Mathieu (F5PED), Franck (F5TVG), John (F5VHQ), Jean Paul (F8BJI), Romain (F8BUI), Jean Marc (F8IXZ), Benoit (F8PDR), Bernard (F9IE), Michel (FM5CD), Dieter (OE8KDK), Bill (N2WB), and Bob (N6OX).

Our support team consisted of Serge (F6AML) who handled logistics and our pilot team of Bruno (F5AGB) and Thierry (F4TTR).

Our initial plan was to ship some of the "non-breakable" equipment to

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INDEXA  
P. O. Box 123  
Catawba, SC  
29704 USA

### Editor & Publisher

John Scott, K8YC  
16212 Walcot Lane  
Cornelius, NC 28031 USA  
jascott@mi-connection.com

### Distribution & Circulation

Bill Jennings, W4UNP  
P. O. Box 123  
Catawba, SC 29704 USA  
w4unp@comporium.net

Send change-of-address information and membership applications to Secretary-Treasurer, Bill Jennings, W4UNP.

Address general correspondence to President, Gary Dixon, K4MQG, at [gdixon@comporium.net](mailto:gdixon@comporium.net).

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Bissau a few months before our departure, but we found the fees to be exorbitant and timely delivery could not be assured. We were therefore limited to the airline luggage allowance (560kg in total). With the increasing price of oil, airlines keep changing their rules and obviously make a pretty good business by charging a premium price for every excess kilogram of luggage. Our motto this year was “no excess luggage fee”, which we succeeded to achieve by keeping accurate weight information next to every item on the packing list.

Based on previous experience, we chose to run 4 high powered stations consisting of three dedicated positions (CW/SSB/DIGI) and one FLEX station that could operate CW or SSB. In addition, we had a barefoot backup station that would only operate higher bands during daytime if propagation was good enough—this station could also be swapped with one of the main stations in case of hardware failure. To ensure ease of operation, we standardized operating position hardware. All stations were IC-7000 with ACOM 1010 linear amplifier, a Microkeyer (CAT/computerized CW) and a networked laptop PC running WinTest. The only exception was the DIGI station running on a TS480 with an ACOM 1010 and a laptop PC running Logger32. An extra PC was to be employed for logistics operations—statistics, log backups, etc.

Our antenna farm was designed to offer mode-specific antennas from 10 to 20m allowing band sharing during daytime and one antenna for each of the lower bands from 30 to 160m. Antenna spacing and locations were defined to minimize inter-station interference. We ensured placement had them firing parallel to each other when beaming to the main DX destinations. The antennas were : a Spiderbeam for 10/15/20m, a Spiderbeam for 12/17/30m, two Spider-



**Our “home” for 10 days was nicely suited for a DXpedition with plenty of space to install antennas and a “low season” so as to not interfere with other guests’ enjoyment of the facilities.**

beams for 20m to 10m, a 4 element wire log-yagi for 40m, a ground plane 80m, an inverted-L for 160m, and K9AY receiving loops with a duplexer system to allow sharing it between 80 and 160m positions.

### Ready to go!

The majority of our 16 team members did not live in the Paris area and had to travel ahead of schedule. Some of them arrived a few days early to do some tourism in France, but all were present on January 9th in Paris for a final equipment distribution and luggage weighing party at F5AGB's house. We were all ready to go and met early on the following morning at Paris Orly airport for an eventless check-in procedure and flight to Bissau with a connection in Dakar.

We landed at 9:00PM in Bissau and as soon as we stepped out of the cabin of the small Dash-8, we were met with the blend of heat, humidity, dust, pollution and vegetation smells typical of most coastal African cities. When we walked in the small luggage area, Gilles was waiting for us with five of his employees. He took all our passports and asked us to check if our entire luggage had arrived. He came back after a short while and asked us to walk out of the

terminal while the customs officer just waived at us with his hand. This was the expedited customs clearance procedure included in our stay at Kaza Afrikana. After loading our luggage onto our wheeled transports, we went for a short night ride through the city to the harbour. Gilles had planned two boats, a larger one 13 meters long with two large 115hp diesel engines that would carry the team and a smaller one with a single engine to carry our equipment. Once we had all boarded the boat, we started the most memorable part of our trip. Bubaque is 70km away, which meant a 2 hour boat ride in the dark of night at 18 knots! Gilles booted his GPS, started the noisy engines, and aimed to the first waypoint of the complex itinerary. He periodically flashed a light signal to the second boat that was behind us with no GPS so it could follow our route. The night was totally black with no moonlight and our boat had no radar system. One of Gilles's employees was lying in the front of our boat with a flashlight. His job was to watch for the numerous wooden fishing boats that had no lights. He was regularly sending light signals and we could see several flashes responding indicating we were defi-

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nitely not alone. Gilles would then slightly change his course to avoid them. The temperature was chilly as we were motoring fast and all of us were wearing coats while joking and being happy to be there. Only a few of us noticed that the anti-collision man fell asleep for most of the second half of our trip. This seemed okay as we were in deeper water at that time with probably fewer boats around us . . . at least we hoped so!

We landed on Bubaque shortly before midnight. Gilles's wife had prepared a fantastic dinner for us. We quickly allocated beds between the 6 rooms of the lodge and decided that we would install our shack in the large central living room on the following day. We all went to bed around 2:00AM trying to get a short rest before an early wake-up.

### Operating

At crack of dawn on Friday January 11<sup>th</sup>, after a short walk around with Gilles to decide the best location of each antenna, the team split into groups. Four of us went to set up the shack while twelve others split into teams of two people—each team in charge of the assembly of one or more antennas. We were pleased to see that the time spent in the previous months modifying the Spiderbeams for faster assembly was worth it. All antennas were installed and tested by late afternoon, only one of the Spiderbeams needed to wait until the following morning to be raised because night arrived. We then performed a full power key down test to check if the generator could carry the load and to ensure we had no inter-station interference. As no problem was found, at 1807Z it was time for countdown and all four stations, from 17/RTTY down to 40/CW, started to call CQ at the same time. After a few seconds, signals were heard, all loud and we logged the first QSOs: F6ENY, KE3G, and K0WK... The pileup quickly started to build. We were to be on the air for ten days!



**An experienced coconut tree climber made quick work of hanging our 40m wire log periodic. Below, Dunestar filters prevented inter-station interference.**



On Saturday morning, we started to install the daily cycle of our operation with 6 hours of operating time for each team member, split in either 3 day shifts of 2 hours or in one day shift plus a 4 hour night shift. Around 1100z, we made a copy of each station log file to make a global merged log that was then used by John/F5VHQ to compute statistics. The key indicator we were tracking was the number of QSOs per band, mode and country. We were also comparing predicted propagation openings to each targeted area versus our experienced band conditions, to factor the necessary adjustments in the following day planning. When

statistics were completed, Pascal/F5JSD prepared global planning for the coming 24 hours showing allocated band, mode and antenna for each operating slot. Team members could then agree among themselves which shifts they would operate based on band and mode preference. At the beginning of each shift, a short look on the updated propagation tables gave a quick heads-up to the operator on band openings that should be tried.

Globally, band conditions were slightly better than expected, but very variable from one day to the next. Being at the lowest point of the solar cycle, several bands behaved very differently than what we had previously experienced in tropical regions.

**10 / 12m:** Both bands were expected to be in bad shape, but they

were probably below our worst predictions. Openings have been limited to Europe with only a handful of North American stations on 12m and none on 10m. Openings could be early or late by several hours from one day to the next, so we had to use the backup station to monitor beacons in order to decide at which point in time it was worth stopping a good run on a lower band to jump on one of these.

**15m:** Band conditions were fair with quite good runs to North America, even in SSB. Propagation forecasts gave us a hope to have long path openings in the mornings to VK/ZL

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Carefully prepared propagation and operating statistics provided each operator with the knowledge to optimize his upcoming shift.

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and in the evenings to JA, but we did not experience any of these, although we tried every day.

**17m:** This was probably the most disappointing band. Our QSO total was approximately 20% lower than our expectations with a total count of 9,550 contacts. Generally, it took a long time for the MUF to rise above 18MHz and due to this we missed most of the possible morning short path openings to Asia. None of the predicted morning long path openings to VK/ZL worked. On at least half of the afternoons, the MUF dropped fast, hence cutting early our North American runs and not allowing propagation to reach the West coast. When the band was open, DX conditions were most of the time unstable with strong QSB. As a result, the share of European contacts on that band is significantly higher than our expectations.

**20m:** This was our workhorse band. We made 25% of our contacts (15,555 QSO) on this band. Conditions were good, although on some evenings the band closed early. The openings were very predictable and repeatable. Approximately 1,200 Japanese stations as well as most VK/ZL were worked during the prolific morning long path window. Afternoon runs to North America were good and signals from the West coast were generally comfortable.

On many occasions we were able to operate two full power stations simultaneously (CW/SSB or DIGI/SSB), and we once had three reduced power stations active when 17m closed early and 30m was not yet open.

**30 / 40m:** Both bands worked very well. Conditions were excellent and openings repeatable. We were successful

working Asia/Oceania long path in our morning hours. Our two yagi antennas gave good results. Bands were pretty quiet with strong signals, even from the most distant regions. It is hard to quantify, but it is a fact that the lack of discipline on 40m severely impacted the number of contacts we made on this band. Besides jamming on our transmitting frequency and stations that did not respect operator instructions when we were making selective calls, we could unfortunately see a growing popularity for two other cheating techniques. The first category is a station with a very identifiable voice or keying style that calls you with his personal callsign and then follows with up to five or ten different callsigns. Such stations are generally loud and it is a time consuming job to avoid them after the first QSO. The second category is what I would call the "online log QSO". In such case, you manage to pick-up the callsign of a station that keeps sending his callsign with no report despite the fact you sent him his report multiple times. Then he sends at random several reports with a timing that is absolutely not in line with yours. He then later checks if he is in the online log. Such cases where the station is not hearing you are easy to figure out. We never logged such QSOs and several of those stations repeated the same behaviour several

days in a row.

**80m:** We were very pleased with the results on this band although our QSO total was a bit lower than planned (5,520 QSO). We could have reached our target of 10% of total contacts if we had been on the air one extra evening using CW. The demand was strong in this mode and we once tried to have two stations (CW/SSB) using a full size dipole hung horizontally between two palm trees at a 60ft level. Unfortunately we could not overcome interstation QRM as both antennas were too close and we had to give up with this idea. In-band filters for 80m are on our shopping list for next year. Our ground plane antenna was very efficient although it was some 400ft from the sea-shore. The K9AY loops were a great help for reception. Sunset conditions were good as well as most night conditions during half of our expedition. Kp index rose significantly around mid-stay hence increasing a lot band noise for several days and making signals far more difficult to copy. Sunrises were pretty disappointing as, when the band was quiet, absorption increased so quickly that we had hardly more than a 20 minute window to the west coast of North America. The other option was a noisy band where we could hardly hear any station.

**160m:** The top band was above all expectations... We made 3,368 QSO and on some evenings, conditions were so good that we managed to switch to SSB and run pile-ups of European and North American stations. We made 512 phone contacts in an aggregated operating time of 8 hours in this mode. Our Inverted-L antenna located only a few feet from the ocean worked very well. Several stations from North America and Asia reported we were the loudest signal ever heard on this band from West Africa. A nice comment indeed. One of our targets on this band was to make at least one contact with Ja-

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pan. The only possibility was during a 30 minute window just before their sunrise. This is a tough polar path highly affected by any magnetic activity. Serge/F6AML was in close contact with Yoshi/JA3AAW in order to agree on an operating procedure and on a transmitting frequency avoiding local broadcast interference in Asia. Yoshi did a lot of advertising on Japanese DX forums to make sure that Asian low band enthusiasts would be ready. On Friday 11<sup>th</sup>, Kp=1, a first attempt did not give any results, but on the following morning, we had an encouraging e-mail from our pilot indicating that we had been spotted by two Japanese stations who heard us. On the following evening, Kp=0, band conditions were excellent with a noise level of only S-3 when listening on our transmitting antenna. Pascal/F5JSD stopped working European stations at 2210z and started calling slowly "CQ JA JA ONLY DE J5C J5C QSX 1822 1822 JA PSE K". By the time he turned the VFO down to the Japanese portion of the band he could hear a pile of stations calling and first thought it would take a while to have Europeans stop calling. After only a few seconds he realized that ALL of those calling were Japanese stations! The first QSO was with the well-known JH4UYB who was 20dB over S-9. Signals were so strong that this was like working an HF band pile-up at 30WPM. Unfortunately, the opening ended quickly as the sun rose in Japan, yet 16 stations were worked in 14 minutes. This was our best opening to Japan on top band. We experienced Kp=0 on two other evenings and worked a few more JAs and a few stations from Asiatic Russia, Malaysia and Australia. A most remarkable phenomenon was the impact of even a minor change in Kp index values. A zero value was excellent while a value of 1 which is generally still good at the mid-latitudes we are used to was already far more noisy. Any reading above 2

meant we could hardly work European stations. During our stay, conditions were very good on January 11<sup>th</sup> through 13<sup>th</sup>, but a major magnetic storm occurred on Jan 14<sup>th</sup> with Kp=5. This made both 80/160m bands very unstable for several days, severely impacting openings outside Europe. Conditions improved again on Jan 20<sup>th</sup> through 22<sup>nd</sup>.



**Could this have been our "night visitors"?  
We'll never know! (See Text)**

### What else?

During such an expedition, besides the pleasure we had in working the pile-ups, there are always a lot of good and bad things happening. Here are a few of them :

- o On January 13<sup>th</sup>, we celebrated Gerard's (F2VX) 65<sup>th</sup> birthday. We made a big party with local dancers and as a gift, we posted the information on our web page. He then had dozens of stations he contacted wishing him a happy birthday.
- o On January 14<sup>th</sup> during one of the night shifts, while Gerard (F2JD) was operating 160m he noticed that his coax was moving a little bit. After a few seconds, something firmly pulled on the coax and Michel (FM5CD) jumped from the nearby 80m station to catch the amplifier just before it fell on the ground. After a short inspection outside, they could not see anything and no damage was reported. After that, Gilles arranged a guard to look after our antennas every night.
- o On January 16<sup>th</sup>, we were pleased to contact our friend Alain (F6ABN) who was in Ouagadougou. He was operating from the newly created club station and giving training to several Burkinabe officials we had met the year before while operating from XT2C. Several of them now have an amateur callsign and are regularly active from this club station.
- o Some of the team members (F8BUI, F8BJI, F5TVG, N6OX) went fishing with Gilles on two occasions and brought back an amazing quantity of fish. Thanks to them, we had fish on our menu daily!
- o Among our few technical issues, our SSB station headset sometimes had RFI issues giving a robotic voice to the operator. It took us a little while to identify the root cause and replace it with another headset. A more tricky one was on our FLEX station where a relay used for keying the amplifier was defective. It was cutting the first dot off of every CW message, generating many repeats, and unfortunately it could not be fixed locally.
- o Finally, our Internet connection was not very reliable. We experienced many satellite uplink issues and were without any possibility to update our web site and online log. As Roger/G3SXW would say, we

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should not worry... "WAWA"—West Africa Wins Always! Keep cool, enjoy a fresh beer and wait... Some of our wives were more worried, as we had no Internet during the first two days after our arrival and could not tell them we had arrived safely. There is no roaming agreement in Guinea-Bissau for our mobile phones and VoIP was the only available telephone line—when it worked!

### Time to return home—Conclusion

On Monday January 21<sup>st</sup>, we stopped all traffic around 1500z to pack most antennas. We had decided to keep only the light 160/80/40m antennas and a sloper for 30m for the last night. In just over two hours the job was done and we resumed operation at sunset. Pile-ups were still as strong as on our first day. On Tuesday morning after breakfast, we split into groups to pack all stations and remaining antennas. Everybody was very quiet on the way back to Bissau. Both our check-in and return flights were fine with no problems. As we had a six hour connection in Dakar, our good friend Daniel (6W7RP) and his wife met us at the airport for a nice din-

ner. It was a really memorable evening.

We all arrived in Paris early on Wednesday 23<sup>rd</sup> January, where we were shocked to find temperatures some 30°C colder than in Guinea-Bissau. After a last goodbye, everybody left. It took a few more days for our stateside friends to get back home.

We made 61,939 QSO in 10 days with 19,213 individual callsigns located in 178 DXCC entities. We had no health issues or hardware failures, and everything but propagation worked as planned. It is now time for post DXpedition work. Franck (F5TVG) has already replied to most direct QSL requests as we write these lines, our log will be uploaded to LoTW shortly, and we've started receiving the first QSL requests via bureau. We spent two fantastic weeks as a large group of friends, learning new things, improving our technique and now are already working on our next trip. We hope you also had fun working us and we are looking to see you again soon in the pileups.

We finally would like to thank our sponsors for their support: Spiderbeam, Clipperton DX Club, UFT, NCDXF, **INDEXA**, EUDXF, Chiltern

DX Club, GDXF, LSDXA, AXA, Mas-trant, WinTest logging software, DX Engineering, REF-Union, RF-Ham, RIT, the City of Provins as well as the numerous individual contributors listed on our web site.

We dedicate this expedition to our good friend Gilles (F5PVF) who passed away far too early a few months before our departure.

—73 *Pascal*, F5JSD

### Your opinion is needed.....

Most of you are now receiving this newsletter via email. Do you prefer the three column format used in this edition of the newsletter or the one column version used for the two recent "Special Editions"?

If you read the newsletter on your computer screen, a single column version reduces scrolling. If you have a preference, drop me a line at: [jascott@mi-connection.com](mailto:jascott@mi-connection.com).

—The Editor, John Scott, K8YC

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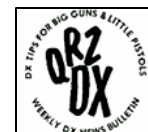
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